

TRANSACTIONS

OF THE

NEW YORK SURGICAL SOCIETY.

Stated Meeting, October 26, 1904.

The President, HOWARD LILIENHAL, M.D., in the Chair.

ACUTE HÆMATOGENOUS INFECTION OF THE KIDNEY.

DR. GEORGE E. BREWER presented a woman, twenty-two years old, who was admitted to Roosevelt Hospital early in October of the present year. She was supposed to be suffering from acute appendicitis. Five days before admission she was suddenly seized with an acute pain in the right side of the abdomen, which was so severe that she was obliged to leave her work and go to her home. During that day her sufferings were intense, and consisted, in addition to her pain, of severe nausea, some vomiting, chills, and fever. During the next four days her condition remained about the same, and on admission to the hospital her temperature was found to be 104° F.; pulse, 130, and of poor quality.

There was marked tenderness over the entire right half of the abdomen, more particularly over the gall-bladder in front and the costovertebral angle behind. From these points downward the tenderness gradually diminished. At McBurney's point only slight tenderness could be elicited on deep pressure. There was moderate rigidity of the right rectus muscle, more marked above than below. Vaginal examination revealed slight tenderness in the right half of the pelvis, and by bimanual palpation this tenderness seemed to be limited to the region of the Fallopian

tube, which was slightly thickened. The urine contained a trace of albumen, hyaline and granular casts, and a few pus-cells. Cystoscopic examination was negative. The ureters were catheterized, and urine drawn from the right kidney differed from the left only in showing a few more white cells. Blood examination gave a leucocytosis of 18,000.

The night after her admission the patient's temperature rose to 105° F., and remained between 103° and 105° for three days. On the fifth day after her admission she was apparently getting more septic and prostrated, and, as there was considerable difference of opinion regarding the diagnosis, an exploratory laparotomy was quickly made under ether anæsthesia. Nothing abnormal was found in the gall-bladder, liver, cæcum, or duodenum. Through the abdominal wound the kidney was palpated and thought to be somewhat enlarged. A second incision was made in the lumbar region exposing the kidney. The areolar tissue in the retroperitoneal space was œdematous, as was the fatty capsule and kidney. On removing this the kidney appeared deeply congested, with numerous subcapsular hæmorrhages. It was incised, and the cortex was found to be the seat of numerous infarcts. A hasty nephrectomy was done, the wound closed in the usual manner, and a dressing applied.

The patient's temperature dropped in six hours from 105° to 97.5° F., and during the following two days was most of the time subnormal. Her convalescence was rapid, the stitches being removed at the end of ten days. The secretion of urine from the first was satisfactory, varying from thirty to sixty ounces in twenty-four hours.

The case was of interest, Dr. Brewer said, for the reason that the lesion was undoubtedly a secondary one, due to blood infection, and was apparently the only lesion of any importance in the body, furnishing all, or nearly all, of the toxins which gave rise to her grave symptoms. In reply to a question, the speaker said that no cultures were made.

DR. CHARLES H. PECK, who had seen the patient shown by Dr. Brewer, said that the clinical picture presented was one of violent sepsis, and it was difficult to believe that the kidney was the only source of infection, without any other focus in the body. The rapid subsidence of the symptoms after the removal of the kidney was very striking.

DR. ANDREW J. McCOSH said that a few years ago he saw a young physician some weeks after a severe attack of measles. Following this, he became desperately ill, and at operation it was found that two abscesses had developed in the kidney, one at the upper, the other at the lower pole, which did not involve the pelvis of the organ. The urine had shown no trace of pus. The kidney was incised, and the abscesses opened and drained. The patient made a slow recovery, and was now entirely well and practising his profession.

DR. LILIENTHAL referred to a case he had reported some years ago. The patient had an attack of erysipelas, followed by a multiple hæmatogenous infection of both kidneys. Repeated nephrotomy was done on both sides, and the kidneys were saved. In Dr. Brewer's case, however, the violent onset of the symptoms and their persistence certainly called for nephrectomy. The speaker said it was to be regretted that no cultures were made from the infarcts.

DR. BREWER, in closing, said the source of the kidney infection could not be found. There was slight tibial tenderness, but this had never interfered with her work.

PAPILLOMA OF TRACHEA.

DR. BREWER presented a boy, aged eleven years, who was admitted to the Roosevelt Hospital in July last. When five years old, he had suffered from extensive papillomatous disease of the larynx, which interfered considerably with respiration. After unsuccessful local treatment, an operation was advised by those in attendance. This was declined by the parents, and the condition grew steadily worse until the dyspnoea became so severe that an emergency tracheotomy was done. The tube was worn continuously for a number of months, during which time local treatment was applied to the laryngeal mucous membrane. Several attempts were made to remove the tube, but on each occasion marked difficulty in breathing followed, necessitating immediate replacement.

After consulting a number of surgeons and laryngologists, the boy finally came under the care of Dr. Frank E. Miller, of this city, who by persistent local applications succeeded in removing the greater portion of the laryngeal growth. This, while it left a sufficient opening in the glottis for ordinary respiration,

afforded no relief, for as soon as the tube was removed the dyspnoea was extreme. It was evident that an obstruction existed in the trachea immediately above the opening for the cannula.

The boy's general condition was poor; he was anæmic, had a chronic bronchitis, and was exceedingly thin. Around the tracheal opening there was an extensive area of inflammation.

On July 5, 1904, under ether anæsthesia, an incision was made in the median line extending from the body of the hyoid to the sternum. The trachea was exposed with considerable difficulty below the original tracheotomy wound, where it was incised and a new tube inserted. The soft parts were then removed from the larynx and the upper segment of the trachea. After all hæmorrhage was arrested, the patient was placed in the Trendelenburg position, and the larynx and trachea freely opened by a median incision extending from the thyrohyoid membrane to the original opening in the trachea. A solution of adrenalin chloride was immediately applied to the cut surfaces and to the laryngeal and tracheal mucous membranes. The tracheal wall was then retracted, exposing the entire mucous lining. Immediately above the old tracheal opening there was found a large papillomatous mass completely plugging its lumen, and attached by a comparatively small pedicle to the left side of the trachea. The mass was about the size of a large blackberry. It was easily removed, and its point of attachment touched with the actual cautery. Several papillomatous masses on and below the vocal cords were also removed. A large rubber tube was then placed within the trachea, extending from the lower tracheal opening upward through the larynx into the pharynx. This was secured by a thread passed from its upper extremity upward through the mouth and tied to the right ear. The trachea was closed over this by one or two catgut sutures; the cutaneous wound was partly closed, and the dressing applied.

The operation was followed by moderate shock. The rubber tube was coughed out at the end of six hours. No embarrassment of the respiration followed its removal, and the patient's convalescence was uneventful. He gained rapidly in flesh and strength, and his bronchitis entirely disappeared. He was now able to go to school, and, although his voice had not returned completely, it was constantly improving.

PAPILLOMA OF THE LARYNX AND TRACHEA.

DR. JOHN F. ERDMANN showed photographs of a girl, now about seven years old, who was referred to him by Dr. C. G. Coakley, and was operated on in November, 1903. She had been operated on at the age of three years by a physician in the South for papillomata of the larynx; so far as could be learned from the history, a high tracheotomy was done and the larynx curetted through this incision.

When the patient came under Dr. Erdmann's care, about two and one-half years later, she presented a dense, cicatricial area in the neck, which corresponded to the upper three tracheal rings and the cricoid cartilage. She was suffering from dyspnoea to such an extent that an emergency operation was necessary. Dr. Coakley had been able, by laryngoscopic examination, to recognize the presence of the papillomata. Tracheotomy under cocaine was done, then a tube was introduced, and chloroform given by means of a funnel and long tube. Owing to the child's condition, it became necessary to substitute ether for the chloroform. A thyrotomy was then done, and a papillomatous mass about the size of a large filbert enucleated. The base of this papilloma was then touched with carbolic acid, the split thyroid cartilage was brought together with catgut, and the wound in the neck closed with the exception of the point where the tracheal tube was inserted. The wound healed rapidly and the tube was removed within a few days. A few weeks later, however, the dyspnoea recurred. This was thought to be due to a stricture formation as the result of the removal of the mucous membrane and the application of pure carbolic acid. Acting on this supposition, intubation was done and gave entire relief. Upon the removal of the intubation tube, however, profound dyspnoea would recur, and in one of these attacks it was necessary to do a tracheotomy before the tube could be replaced. Successive sized tubes were introduced with the view of preventing stricture formation, and also to try the effect of pressure upon the papillomatous growths, which were known to have recurred.

The child's family were anxious to take her away for the summer, and in order to be on the safe side it was deemed advisable to insert a tracheal tube and remove the intubation tube. This was done in June, and at that time the tracheal wound was perfectly clean. Three months later, on her return, a large papillo-



FIG. 1.—Papilloma of larynx and trachea.

matous mass surrounded four-fifths of the opening of the tracheal wound; this was partially sessile, extending to the edge of the wound, and partially pedunculated, protruding from the trachea between the edges of the wound and the tracheal tube. (Fig. 1.)

The second operation was done by Dr. Erdmann three weeks ago. The papilloma at the tracheal wound was cut off, and the incision extended downward as far as possible. It was observed that with each expiration the tube through which the ether was being administered would become plugged, spreading the edges of the wound. This proved to be due to the fact that a pedunculated papilloma, fully the size of a hazel-nut, was acting as a ball-valve. This growth was pulled up through the wound and excised. The wound was then extended upward, again splitting the thyroid cartilage and cutting to the hyoid bone and dividing the base of the epiglottis. Papillomata were found all the way up to the epiglottis, and a large mass protruded upward into the oropharynx. After thorough extirpation, the mucous membrane was carefully dissected from all suspicious looking areas. The tracheal tube was left in the lower angle and the wound packed. It was considered advisable to leave the wound open, so that proper treatment could be instituted in case of a recurrence. This proved to be a wise precaution, as very recently the upper portion of the wound showed a fungous growth which pointed to a recurrence.

DR. ROBERT H. M. DAWBARN asked Dr. Brewer whether in dealing with these cases it would not be advisable to save the cricoid cartilage. Unless this cartilage thoroughly reunited, it would seriously interfere with the *timbré* of the voice, and the division of this rigid band was to be deprecated unless it was absolutely necessary.

DR. BREWER, in closing, said his reason for cutting the cricoid cartilage was that a child of this age had a very delicate trachea, and it would have torn even upon slight traction. It was thought better to divide the cricoid, therefore, rather than run the risk of tearing loose the trachea from that cartilage.

CONGENITAL INVERSION OF THE APPENDIX.

DR. BREWER presented a woman, twenty-two years old, who was admitted to the Roosevelt Hospital in the spring of 1904, suffering from pain, tenderness, and muscular rigidity in the

right iliac fossa, together with fever, nausea, vomiting, and prostration.

On examination, there was acute tenderness in the region of McBurney's point, and on deep pressure an indefinite mass could be felt, strongly suggesting an appendicular abscess. On opening the abdomen, a dense mass of adhesions was found, consisting of the cæcum, omentum, and several loops of small intestine. These were with difficulty separated, but after prolonged search no sign of an appendix could be found. The cæcal wall seemed somewhat thickened, and in the course of the search for the appendix the cæcum was wounded, but immediately repaired. The search for the appendix was a very thorough one, and was continued until the condition of the patient necessitated the closure of the wound. She made a prompt recovery from the operation, and was discharged in about three weeks. From time to time during the next five months she returned to the hospital, complaining of pain in the right inguinal region, which was so severe on exertion as to prevent her attending to her household duties.

On examination, the patient was found to be anæmic, badly nourished, excessively nervous and hysterical. On attempting to palpate the abdomen she screamed, cried, and moved about to such an extent that successful palpation was impossible. This led to the opinion that the condition was largely hysterical, and no operative interference was advised for several weeks. Her persistent complaints, however, finally led to the proposal of an exploratory laparotomy, in the hope of finding something to account for the symptoms.

Early in July, 1904, under ether anæsthesia, the abdomen was opened by the Kammerer incision, along the outer border of the right rectus muscle. On opening the peritoneal cavity a dense mass of adhesions was encountered, necessitating considerable dissection before the structures could be identified. The cæcum was finally isolated, and its three longitudinal bands followed downward to their junction at the inferior extremity of the gut, but no trace of an appendix could be found. The cæcum was then dissected free from the abdominal wall, and, with the ileum, raised so that every part could be thoroughly inspected. By this means, Dr. Brewer said, they were able to convince themselves that no trace of an appendix existed. At the usual site

of the appendix implantation, however, a small oblong tumor was felt within the cæcum. There was also a distinct transverse thickening of the colon just above the ileocæcal valve, which apparently formed a decided narrowing of its lumen. The bowel was incised longitudinally through its cicatricial band, and its cavity freely explored. It was found that this band formed a stricture which barely admitted the tip of the forefinger. The cavity of the cæcum itself seemed normal in size, but from its inferior extremity there projected inward a rounded mass, about one inch in length and with a diameter corresponding to that of an ordinary lead-pencil. This mass seemed covered with a thickened mucous membrane of a deep red color. It was suggested at the time that the mass had the appearance of an inverted appendix which had been chronically inflamed. The mass was divided with seissors at its attachment, and the mucous membrane stitched over the stump. It was preserved in a mild solution of formalin and sent to the Pathological Laboratory of the College of Physicians and Surgeons for examination.

The wound in the cæcal wall was closed by a row of sutures, converting the longitudinal into a transverse wound, which resulted in a very considerable enlargement at the point of stricture. The patient made a satisfactory convalescence, the wound healing primarily. Since the operation she has been entirely relieved of her symptoms, and has gained considerably in weight and strength.

The following is the report of Dr. Norman E. Ditman, Assistant Pathologist at the Roosevelt Hospital: The specimen shows a section of an inverted appendix, epithelium of the mucous membrane being present upon both the inner and outer surfaces of the mass. The peritoneal surfaces have become fused, and throughout the greater part of their extent there is no sharp line of demarcation between the two layers. The appendix is the seat of a mild, chronic inflammation. In addition to this there is a recent exudation of pus-cells, with great congestion and dilatation of the peripheral capillaries, pointing towards a strangulation at some point nearer the base.

Dr. Peck said he was present at the first operation, and could verify the statement that the appendix was not removed. A very thorough search was made without succeeding in finding it. The bowel itself was accidentally opened, but no sys-

tematic search of its interior was made. There was a good deal of evidence of typhlitis or inflammation of the entire cæcal wall at the time of the primary operation.

RESULT OF EXCISION OF MIDDLE THIRD OF BOTH STERNOCLEIDOMASTOID MUSCLES.

DR. ROBERT H. M. DAWBARN presented a woman, twenty-two years of age, who four years ago began to develop tubercular lymph nodes in large masses beneath the sternocleidomastoid muscles, chiefly upon both sides, but worse upon her left, which side was first operated upon, therefore. In order to obtain light and room for safe work, the muscle in question was divided in its lower part, about the junction of the lower third with the upper two-thirds. As the operation presently showed, pressure by the mass of diseased glands had led to obliteration of all vessels passing downward in the muscular substance from its origin or thenceabouts; consequently, he feared for the life of the central portion of the muscle, now cut off from nourishment both below and above. On the fourth day Dr. Dawbarn revised the wound and cut away the middle third of the sternomastoid, now plainly dead and beginning to decompose. Also, as a corresponding length of the deep jugular was sloughing, it was deemed safest to prevent a possible secondary hæmorrhage by tying above and below and excising the same length of this vein. The corresponding pneumogastric nerve was apparently gangrenous, but was left, with gauze drainage of the wound. Before this revision (twenty-four hours) the heart began to race; and from that time, for a few weeks subsequently, this tachycardia was continued in spite of various medicinal attempts at slowing the pulse-rate. It ran between 120 and 150, and notwithstanding there was no dyspnoea nor cyanosis from walking about the room. Ultimately, the heart action became normal once more.

A few months after the first operation, Dr. Dawbarn extirpated the enlarged glands on the opposite side of the neck, and for the sake of symmetry took out the middle third of the sternocleidomastoid muscle on that side, too. The removal of this section of the muscle on both sides apparently had no effect whatever on the motion of the parts, as was demonstrated before the society—the patient moving her head freely in all directions. Moreover, whereas formerly her muscles stood out prominently from a thin

neck, now the neck is round and shapely; much the better in appearance for their loss. Dr. Dawbarn expressed surprise that such large and active muscles should not be missed in function.

The patient was also suffering from an extensive lupus erythematosus involving both sides of the face. One side had been treated with the X-rays, the other with the Finson rays, and the lesions had apparently improved to a somewhat greater degree under the latter than under the former therapeutic agent.

In the neck, one gland, the size of a chestnut, had appeared beneath the body of the lower jaw since the operations. This, upon suggestion of Dr. Tiffany, of Stamford, Connecticut, he had treated by daily injection of an ointment of phytolacca, with benefit. At present it is reduced fully one-half.

As a further point of interest in this case, at this first operation upon her left, while dissecting out bluntly the lowest glands, about three centimetres below her clavicle, the wound suddenly filled with a milky fluid. Fortunately, this happened coincidentally with the removal of the diseased gland in question; and prompt packing with gauze, maintained in place for ten minutes, was not followed upon its withdrawal by any further escape of chyle. Such a tear into the thoracic duct is new in Dr. Dawbarn's personal experience.

DR. BREWER said he agreed with Dr. Dawbarn that removal of the sternocleidomastoid was attended with very little loss of function. In a case he saw last winter he was obliged to remove nearly the entire muscle on one side. The operation was not followed by torticollis, and almost normal motion had since been regained.

INOPEKABLE ROUND-CELLED SARCOMA OF THE CHEST WALL, INVOLVING RIBS, SUCCESSFULLY TREATED BY MIXED TOXINS OF ERYSIPELAS AND BACILLUS PRODIGIOSUS.

DR. WILLIAM B. COLEY presented a boy, sixteen years old, who enjoyed good health up to 1903, when he had an attack of what was considered to be pleurisy with effusion. He was aspirated, but the dullness over the chest persisted, and he rapidly lost flesh and strength. He was sent South without improvement, and early last March entered the Johns Hopkins Hospital, where he was operated on for a supposed empyema. A

large incision was made, revealing a necrosis of the eighth and ninth ribs, and behind these some gelatinous masses were found. These were partially removed and pronounced round-celled sarcoma. On the 26th of last May the patient was admitted to the General Memorial Hospital, where for two months he was treated with regular injections of the mixed toxins of erysipelas and bacillus prodigiosus. He also had X-ray treatment three times a week. At the beginning of the treatment there was a mass about the size of a man's hand over the ribs, with an extensive, sarcomatous-like sloughing area in the centre. The tumor has entirely disappeared. The patient's general health had also improved and he had gained twenty-six pounds in weight. He returned to his home in Canada, since which time he has received from two to three injections weekly of the mixed toxins in smaller doses.

STRICTURE OF THE ŒSOPHAGUS.

DR. JOHN A. HARTWELL presented a male infant, twenty months old, who was admitted to Bellevue Hospital on June 30, 1904. About two months previous to his admission he had swallowed a few drops of caustic potash, which burned his lips and mouth. A month or six weeks later his mother noticed that he had difficulty in swallowing. On admission, he could swallow fluids only, and with difficulty.

An attempt was made to pass an œsophageal bougie three millimetres in diameter, but this was stopped about five inches from the teeth-line. Gastrostomy was done in July 5, under ether anesthesia, by the Kader method. For two weeks subsequent to the operation the child was fed through the mouth, taking peptonized milk and broth without any leakage from the gastrostomy wound. By that time the wound had healed, and a non-inflamed opening into the stomach presented. On July 19 the patient was given a glass of milk with a silk thread coiled up in it. This he swallowed, and by means of a blunt hook the thread was caught and drawn out through the gastrostomy wound on the first attempt. This was left *in situ* for twenty-four hours to accustom the boy to its presence, and then a No. 14 olive-tipped bougie of the Dunham pattern was drawn down to the stricture by means of the silk. A fish-line thread was then drawn through the œsophagus beside the bougie and brought to bear

on the stricture. With the pharyngeal and stomach guides *in situ*, the stricture was cut with ease, and the olive bulb on the wire passed through the point of stricture. This was repeated with increasing sized bougies, until a No. 32 F. could be introduced, the length of stricture cut appearing about three-quarters of an inch. The same night the patient was allowed fluids by the mouth. These he took without difficulty. The thread was left *in situ*, and the gastrostomy wound kept open by passing a catheter through it once daily. The œsophageal bulbs of Dunham were passed at ten-day intervals for a month, and then the conical whalebone bougie of thirty-five millimetres circumference was passed by mouth. The gastrostomy wound was then allowed to close spontaneously, and by the passage of the latter bougie every ten days the stricture has been kept open, so the child swallows ordinary food with ease. A longer interval than ten days permits of sufficient contraction to produce a difficulty in taking solid food.

DR. DAWBARN said that about ten years ago he saw a hysterical girl who was suffering from repeated nose-bleeds, and it finally became advisable to tampon the nasopharynx. The patient, however, refused to permit the catheter to be introduced through the nose. Dr. Dawbarn then asked for some sewing-silk, and rolling about five or six feet of it into a tight ball he introduced this into the nose, and then she inhaled it and hawked it up through the mouth.

DR. HARTWELL, in reply to a question as to what the normal caliber of the œsophagus of a young child was, said he had no definite information on that point, but from observations made in the dissecting-room he was led to believe that it was about No. 35 F. He had found that this sized bougie easily passed through the normal parts of the œsophagus in this case. In connection with the subject of œsophageal stricture, Dr. Hartwell said he had recently heard of a case under the care of a Boston surgeon in a patient who refused to submit to gastrostomy. She was given a string to swallow with drinking-water, and the string was allowed to pass through the stomach and for some distance along the intestine. In this manner the lower end of the string became so firmly fixed that it could be rendered taut from above, and served as a guide for the passage of a tunnelled bougie into the stomach.

FRACTURE OF LOWER END OF FEMUR, WITH VICIOUS UNION.

DR. HARTWELL presented a boy of sixteen years who was admitted to Bellevue Hospital on July 27, 1904. Four months previously a horse he was riding fell with him, his right leg and lower thigh being caught between the horse and the pavement. He was taken to a hospital and put to bed with no other treatment than an ice-bag applied to the knee. He did not recall how long it was before he was allowed to get up and walk about.

On his admission to Bellevue the following condition was found to exist: The right knee could be hyperflexed, both actively and passively, but extension was limited to about 160 degrees passively, and a little less actively. There was no pain in this movement. The hindrance to complete extension seemed to be bony, although the posterior soft tissues were also drawn very tense. Palpation of the lower end of the femur showed a marked thickening just above the epiphyseal line, and there seemed to be an angular deformity at this point, with the lower fragment bent acutely inward, so that the inferior end of the condyles looked downward and backward nearly to 45 degrees. There was firm bony union between the fragments. The right extremity was an inch and a half shorter than the left. The radiograph apparently corroborated the diagnosis of an oblique fracture from before backward and downward of the lower end of the femur, with backward tilting of the condylar fragment.

On August 1, an incision was made on the external aspect of the femur, just in front of the biceps tendon. This was carried down to the bone just above the joint and the epiphyseal line, and on pushing aside the periosteum no line of fracture could be felt. On passing the finger under the periosteum, however, to the inner side of the bone, the line of fracture, as diagnosed, could be felt, together with the displacement. An attempt to break up the union with the chisel from the wound failed, and accordingly an internal longitudinal incision was made in the line of the adductor tubercle. This was carried down to the bone, and with the mallet and chisel the lower fragment was loosened, and complete separation effected by bending the bone laterally. It was then ascertained that the line of fracture was oblique, from a point about two inches above the epiphysis on the inner side of the femur, outward and downward to the epiphyseal line at the centre of the bone, and thence an epiphyseal



FIG. 2.—Postoperative condition in fracture of the lower end of the femur, with vicious union.

separation from the outer side of the shaft. The lower fragment thus included about two inches of the inner half of the shaft attached to the epiphysis, which had separated from the outer half transversely, and this fragment had tilted backward and united in such a way as to cause considerable shortening and produce the downward and backward aspect of the condyles. This accounted for the symptom of hyperflexion and limited extension, and also explained the absence of a fracture line on the outer aspect of the shaft, the line here being the epiphysal line, which was below the lower end of the incision. The joint was not opened during the operation. The fragments were brought into very fair apposition by traction on the leg and direct manipulation of the fragments with large bone hooks. The shortening could be entirely done away with, and full extension was possible. The wounds were sutured, with a small kangaroo tendon drain left in the internal one. A plaster-of-Paris splint was applied with the limb in the normal fully extended position, and the fragments forced as nearly as possible into correct apposition. No sutures were used to unite the bone, but the periosteum was carefully sutured. After twelve days a window was opened and the wounds found practically healed. At the end of four weeks the splint was replaced by a posterior one, and in about seven weeks, union seemingly absolutely solid, the patient was permitted to walk. Complete extension was then possible, and there was no shortening. Owing to stiffness in the knee-joint, however, only limited flexion was obtained. It was deemed wise to treat this latter only by walking exercises and massage rather than by any forcible breaking up of adhesions. Now, at the end of about ten weeks, flexion was easily carried beyond 45 degrees, and was increasing rapidly from day to day. Extension was complete and there was no shortening. The functional result promised to be completely satisfactory, though the anatomical result as determined by the radiograph shows still a considerable angularity between the fragments. (Fig. 2.)

AMPUTATION OF SHOULDER-GIRDLE.

DR. HARTWELL presented a man, fifty-five years old, who was admitted to Bellevue Hospital on July 11, 1904. His family history was negative. Twenty-one years ago he fell, striking on his right shoulder and hip, sustaining contusions, but no fracture, and he was incapacitated by the accident for only one week.

Fifteen years ago he first noticed a lump about the size of an English walnut on the top of the right shoulder. For twelve years it grew slowly, but constantly, until it attained a size about four or five inches in diameter. After that it grew more rapidly, and had nearly doubled in size during the past two years. It had never caused him any pain to speak of, and there had been no interference with the movements of the arm. He applied for relief only because the mere size of the tumor interfered with his work, and for the past six months he had been losing weight and strength, which he thought might be the fault of the growth.

The tumor measured about nine inches in its long diameter and four to five inches across, with a height of about five inches above the clavicle. It was firmly attached to the outer half of the clavicle, to the acromion, and for a small distance to the spine of the scapula. It extended from the inner third of the clavicle out beyond the deltoid insertion. On the chest it extended two or three inches below the clavicle, and behind its base passed over the outer portion of the spine of the scapula, just about covering the deltoid border. On this extensive base it was movable to some extent, all the tissues moving with it. In consistency, it resembled the liver, though some portions were harder than others, giving something of a nodular outline to the tumor. There were many large veins passing superficially over it, and the skin was of a bluish tint, and in places thin and just ready to ulcerate. One or two superficial ulcerations already existed. There was a fluctuating, globular mass in the axilla, the size of a small orange, which was movable under the skin and in the deep parts. (Figs. 3 and 4.)

On the inner and posterior aspects of the left thigh, near the gluteal fold, was a second large tumor, several inches in circumference, which in its general appearance resembled a lipoma, but in the centre of which existed a hard, nodular mass, of the nature of fibroid tissue. This tumor he had had ever since he could remember, and he declined to have it removed or a section taken from it. A specimen removed from the shoulder was diagnosed as endothelioma.

Amputation of the shoulder-girdle was done on July 16 of the present year, under nitrous oxide and ether anæsthesia. As a first step, an incision was made over the inner end of the clavicle, this bone exposed, and a two-inch section of it removed with the Gigli saw. This exposed the subclavian vein and the



FIG. 3.—Endochondroma of shoulder, anterior view.



FIG. 4.—Endothelioma of shoulder, lateral view.

transversalis coli and suprascapular arteries, all of which were caught in loose ligatures. The scalenus anticus was then divided near its insertion, and the subclavian artery easily reached, doubly ligated with chromic catgut, and divided. The vessels already exposed were then ligated with plain gut, thus limiting as much as possible the amount of blood in the arm. The incision was then carried outward an inch below the anterior border of the tumor and across the axilla below the mass that existed there. The central flap was dissected inward, the pectoral muscles exposed and divided at the level of the skin incision, and the whole axillary contents cleaned out, still attached to the under surface of the tumor. A posterior skin incision was then made, following one inch outside the border of the tumor down into the axilla, below which it joined the anterior incision. The central portion of the posterior flap was dissected inward to the vertebral border of the scapula and downward to the angle. Division of the muscles holding the scapula to the body was then made, the latissimus dorsi was cut through at the level of the scapular angle, and thus the disarticulation in one mass was completed. The early ligation of the vessels so effectually controlled the hæmorrhage that not more than two or three ounces of blood, other than that in the arm, were lost. Five minutes before cutting through the brachial plexus near the outer border of the scalenus anticus, ten or fifteen minims of a 2 per cent. solution of cocaine were injected into the trunks, as suggested by Crile. Though no accurate blood-pressure tests were made, the palpating finger could detect no change in the pulse when the nerve-trunks were divided, and the patient seemed to suffer no shock.

The flaps were easily drawn together without tension, the removal of the deep tissues more than compensating for the loss of skin. A drain was inserted in the lower end of the pocket, through an incision made for that purpose. The condition of the patient was excellent, considering the extent of the operation. Convalescence was uneventful, except for a slight infection in the inner end of the wound, which separated, and finally closed by granulation at the end of several weeks.

Dissection of the tumor showed it invading the clavicle, in the outer end of which there was a hole of about two drachms' capacity, which was filled with the new growth. The periosteum of the clavicle was destroyed in its outer half. The scapula and humerus were not involved.

Pathological report made by Drs. Ewing and Strauss. The structure of the tumor is that of an alveolar endothelioma. The cells are rounded or polygonal in form, of medium size, with homogeneous protoplasm and densely staining compact nuclei. They are arranged in convoluted rows surrounding small alveoli. The alveoli are everywhere embedded in mucus, into which the tumor cells are being transformed. This form of degeneration has probably had much influence in limiting the malignancy of the growth. The tumor masses are rather sharply separated from the surrounding connective tissue, which they show little tendency to invade. The exact histogenesis of the tumor it is impossible to state. In several places the alveoli are distended with blood, suggesting an origin from vascular endothelium, but, on the other hand, most of the alveoli are collapsed and empty. Most tumors of this histological type are derived from the endothelium of lymph vessels. The whole tumor has a markedly embryonal type, suggesting the possibility of origin from a remnant of embryonal tissue. The very definite connection of the tumor with the periosteum of the clavicle suggests an origin from the endothelial structure of this tissue, and such origin has frequently been assigned to tumors of bone showing the same general structure as the present tumor.

SOME EXPERIMENTS WITH A NEW METHOD OF CLOSING WOUNDS OF THE LARGER ARTERIES.

DR. GEORGE E. BREWER read a paper with the above title, for which see page 856.

DR. DAWBARN said he had done some experimental work along the lines indicated in Dr. Brewer's paper, and his experience had led him to doubt whether it would be practicable to employ an adhesive material in the closure of wounds of the arteries. The surface of the arterial walls was always moist, and a number of years ago, the speaker said, it occurred to him that it would be desirable to find something that would adhere to a moist surface, and that would take the place of a suture in intestinal work. He experimented with a great many substances, even going to the trouble of obtaining a sample of a peculiarly adhesive kind of mistletoe growing in Japan, but all were open to the objection that they would not adhere to a moist surface. Instead of an adhesive substance, like rubber plaster, Dr. Daw-

barn suggested that Cargile membrane might answer the purpose in dealing with wounds of the larger arteries.

DR. L. W. HOTCHKISS said that Dr. Dawbarn had lost sight of the most important feature of the rubber plaster in closing wounds of the larger arteries, namely, its elasticity, by which it exerted compression without constriction. While the possibility of an exudate over a torn surface like an artery should always be kept in view, there was little danger of its becoming troublesome and washing away a compressing agent in the shape of an adhesive and elastic membrane, like the one shown by Dr. Brewer.

DR. JOSEPH A. BLAKE said that while cases in which the method described by Dr. Brewer would be indicated were comparatively rare, they were very urgent when they did occur. The experiments with which Dr. Brewer had been extremely successful opened a wide field for further investigation. The idea seemed perfectly feasible, although the speaker said he did not think it would be applicable to an end-to-end union of the vessels. The plaster might be applied as an additional safeguard in such cases after suture.

DR. LILIENTHAL said he saw Dr. Brewer resort to this method in an experimental operation on a dog last spring, and he was struck by the great difficulties he had to contend with. The speaker said he would be willing to give the method a trial in case he ever had the misfortune to wound a large artery, but not without employing sutures as well. If the rubber plaster acted so well without suture, then it certainly ought to be a very valuable adjunct to imperfect suturing, and in such a case might even prove a life-saving measure. While wounding a large artery was a rare accident, it was likely to happen to anybody.

DR. BREWER, in reply to Dr. Dawbarn, said he thought that rubber plaster was preferable to Cargile membrane because the former maintained the normal elasticity of the artery. In regard to the use of sutures, Dr. Brewer said it was a difficult matter to suture an artery of small caliber, or one that was the seat of calcareous degeneration, or when high arterial tension was present, and under such circumstances the speaker said he would not hesitate to use plaster alone; and he would be inclined to do so in dealing with any artery that could be exposed and reached. In certain cases, of course, where the artery could not be elevated or surrounded, the method would be inapplicable.